SA-WM40

SERVICE MANUAL

Ver 1.2 2002.09

US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model

SPECIFICATIONS

For the U.S.A. model

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

With 8 ohm loads, from 20 – 170 Hz; rated 120 watts, minimum RMS power, with no more than 0.8 % total harmonic distortion from 250 milliwatts to rated output.

System

Type Active Subwoofer (magnetically shielded design)

Speaker unit
Woofer: 30 cm dia. (12 in.), cone type

Continuous RMS output
European model (DIN)
120 W
Other models (0.8%)
120 W

Reproduction frequency range
20 Hz – 170 Hz

High frequency cut-off frequency
50 Hz – 170 Hz

Phase selector
NORMAL, REVERSE

Inputs

Input jacks
LINE IN: input pin jack
SPEAKER IN: input terminals

Output jacks
LINE OUT: output pin jack
SPEAKER OUT: output terminals

General

Power requirements
European model
220 – 230 V AC, 50/60 Hz
Other models
120 V AC, 60 Hz

Power consumption
90 W

Dimensions
Approx. 360 x 425 x 430 mm
(w/h/d) (14 1/4 x 16 3/4 x 17 in.)

Mass 18 kg (36lb 11oz)

Supplied accessories
Audio connecting cord
(1 phono plug – 1 phono plug) (1)
Speaker cords (2)

Design and specifications are subject to change without notice.

ACTIVE SUBWOOFER

9-929-065-12
2002I0500-1
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Sony Corporation
Home Audio Company
Published by Sony Engineering Corporation

SONY®

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage.
Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes.). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

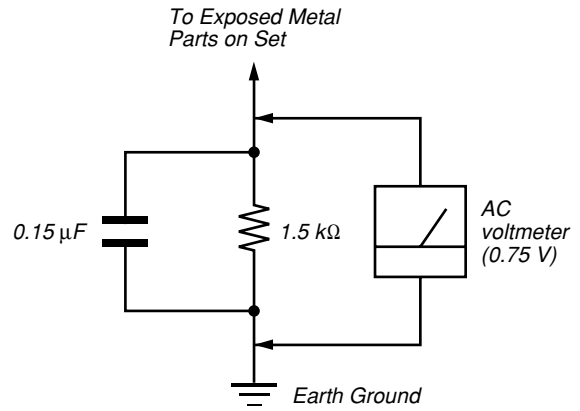
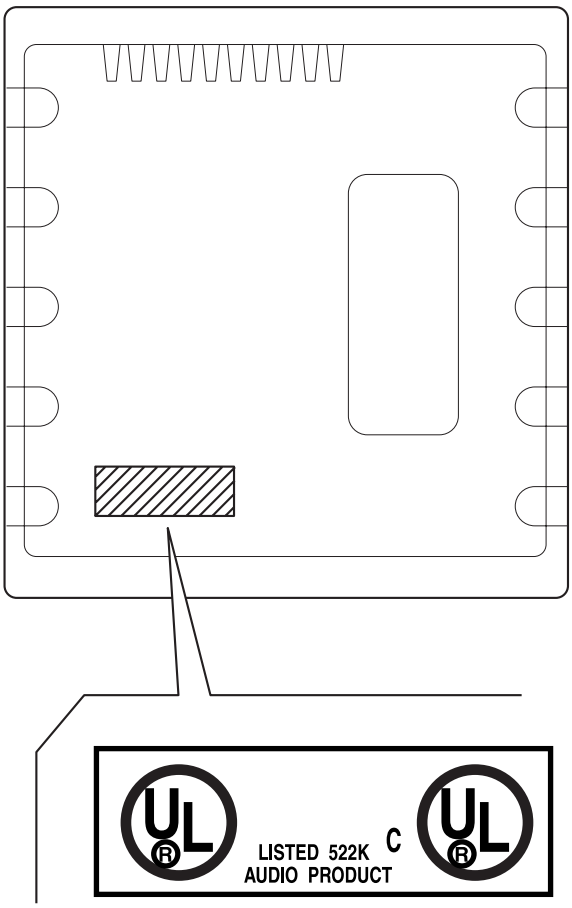


Fig. A. Using an AC voltmeter to check AC leakage.

MODEL IDENTIFICATION

– Rear View –



with this indication : US, Canadian models
without this indication : Except US, Canadian models

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

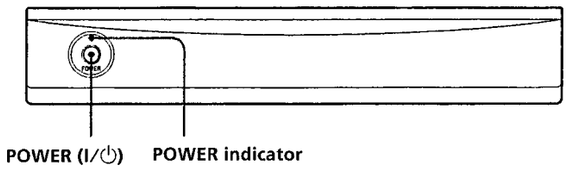
ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

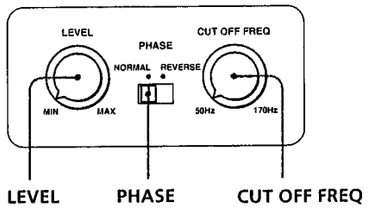
SECTION 1
GENERAL

- **Location of controls**

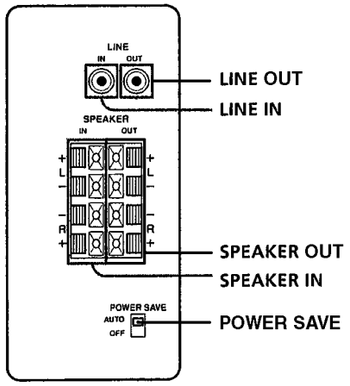
– Front View (a part) –



– Upper View (a part) –



– Rear View (a part) –



SECTION 2
DIAGRAMS

2-1. NOTE FOR PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

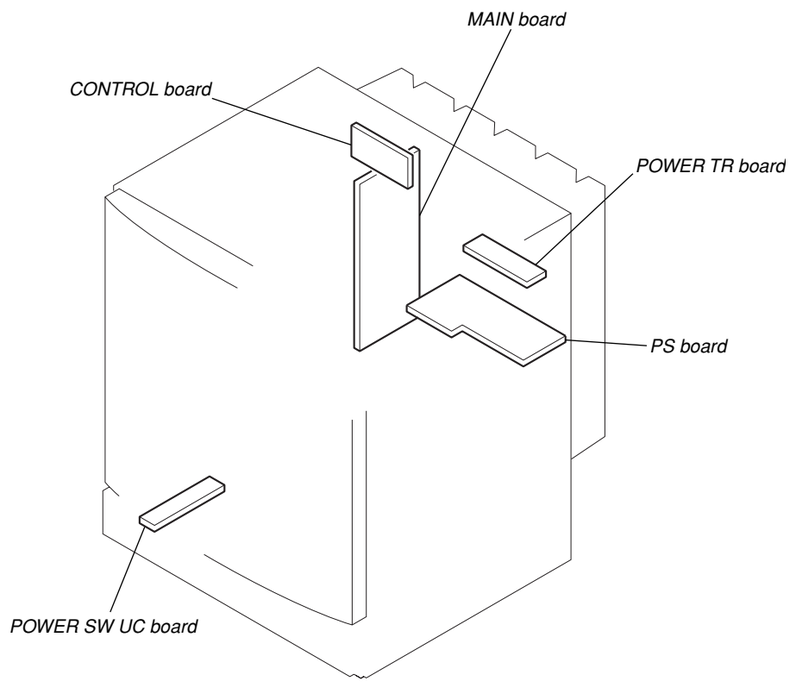
Note on Printed Wiring Boards:
- o——— : parts extracted from the component side.
- ——— : parts extracted from the component side.
- ▒▒▒ : Pattern from the side which enables seeing.

Note on Schematic Diagram:
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- ▭ : panel designation.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- **B+** : B+ Line.
- **B−** : B– Line.
- Voltages are dc with respect to ground under no-signal conditions.
  no mark : Power on
  ( ) : Automatic power off
  ✻ : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : AUDIO
- Abbreviation
  AUS : Australian model
  CND : Canadian model

- **Circuit Boards Location**

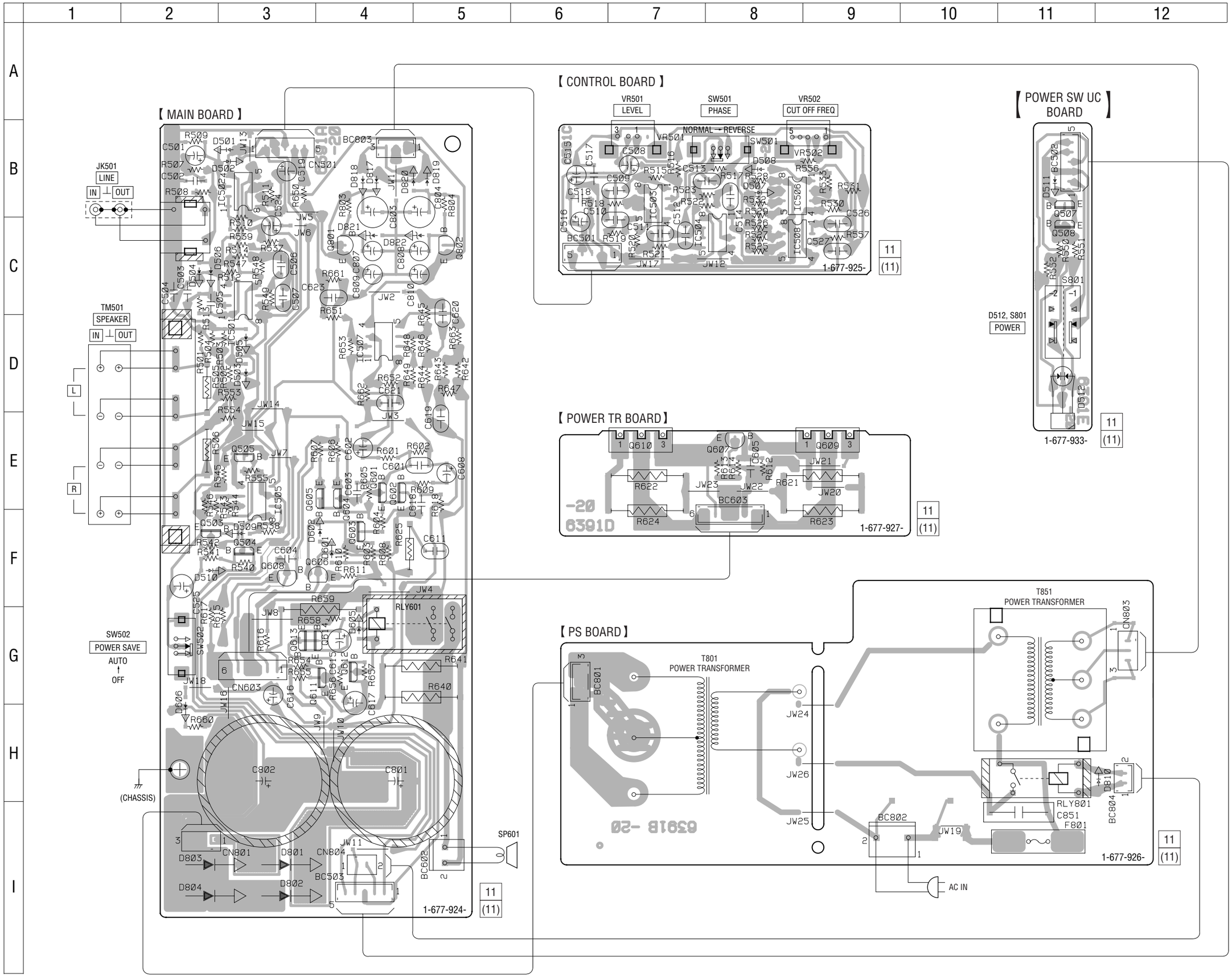


2-2. PRINTED WIRING BOARDS (US, Canadian models)

• See page 3 for Note on Printed Wiring Boards. • See page 3 for Circuit Boards Location.

- **Semiconductor Location**

Ref. No.	Location
D501	B-3
D502	B-3
D503	D-3
D504	C-2
D505	D-3
D506	C-2
D507	B-8
D508	B-8
D509	F-3
D510	F-2
D511	B-11
D512	D-11
D601	F-4
D602	F-4
D605	G-4
D606	H-2
D801	I-3
D802	I-3
D803	I-2
D804	I-2
D810	H-12
D817	B-4
D818	B-4
D819	B-5
D820	B-5
D821	C-4
D822	C-5
IC501	C-3
IC502	B-3
IC503	B-7
IC504	C-8
IC505	E-3
IC506	B-8
IC507	D-4
IC508	C-8
Q503	F-2
Q504	F-3
Q505	E-3
Q507	B-11
Q508	C-11
Q601	E-4
Q602	E-4
Q603	F-4
Q604	E-4
Q605	E-4
Q606	F-4
Q607	E-8
Q608	F-3
Q609	E-9
Q610	E-7
Q611	G-4
Q612	G-4
Q613	G-3
Q614	G-4
Q801	C-4
Q802	C-5



2-3. SCHEMATIC DIAGRAM (US, Canadian models) • See page 3 for Note on Schematic Diagram.

【MAIN BOARD】

【CONTROL BOARD】

【POWER TR BOARD】

【POWER SW UC BOARD】

【PS BOARD】

IC501 (1/2) MIX AMP

IC501 (2/2) LIMITER AMP

IC502 (2/2) BUFFER

IC502 (1/2) LINE AMP

IC503 (2/2) BASS BOOST AMP

IC503 (2/2) HIGH-PASS FILTER

IC504 (1/2) LOW-PASS FILTER

IC504 (2/2) LOW-PASS FILTER

IC508 (1/2) BUFFER

IC508 (2/2) FILTER AMP

IC506 FILTER AMP

IC505 (2/2) LEVEL SHIFT

IC505 (1/2) COMPARATOR

IC507 BUFFER

Q601, 602 PRE DRIVE

Q603, 606 CURRENT REGULATOR

Q604, 605 CURRENT MIRROR

Q608 2SC2705 CURRENT REGULATOR

Q609 MN2488 FINAL DRIVE

Q610 MP1620 FINAL DRIVE

Q607 2SC1815 BIAS

Q801 2SC1815 +12V REGULATOR

Q802 2SA1015 -12V REGULATOR

Q613, 614 OVER LOAD DETECT

Q612 2SC2784 RELAY DRIVE

Q611 2SC2785 POWER ON MUTING

Q503 DTC124ES AUDIO SIGNAL DETECT

Q504 2SA1464-T2Y POWER SAVE SWITCH

Q505 DTC124ES RELAY DRIVE, LED COLOR SEL CT

Q508 BN1F4M LED DRIVE (RED)

Q507 BN1F4M LED DRIVE (GREEN)

SW501 PHASE REVERSE NORMAL

SW502 POWER SAVE OFF AUTO

RY601

RY801

T801 POWER TRANSFORMER

T851 POWER TRANSFORMER

F801 2.5A/125V

SP601

AC IN

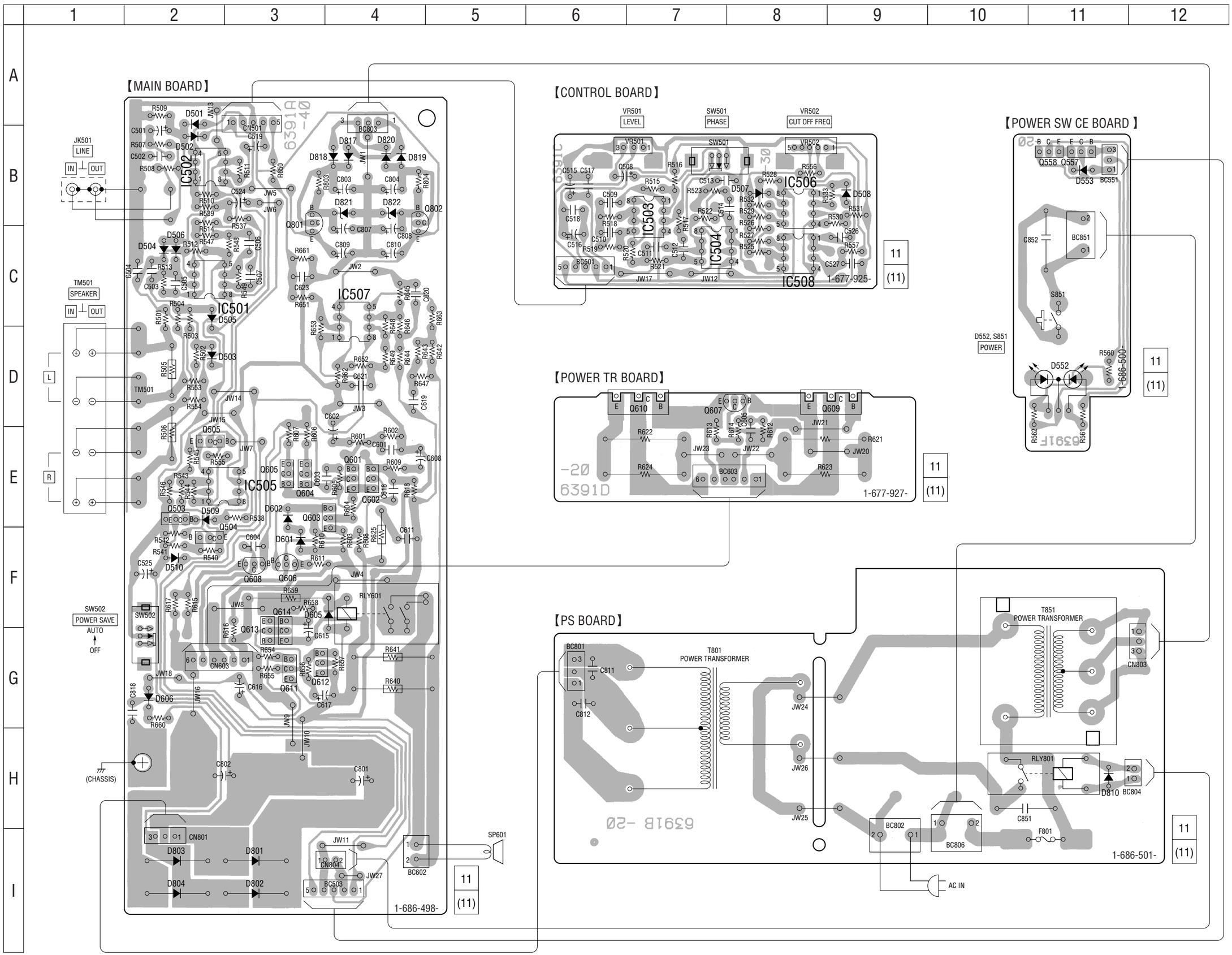
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

2-4. PRINTED WIRING BOARDS (Except US, Canadian models)

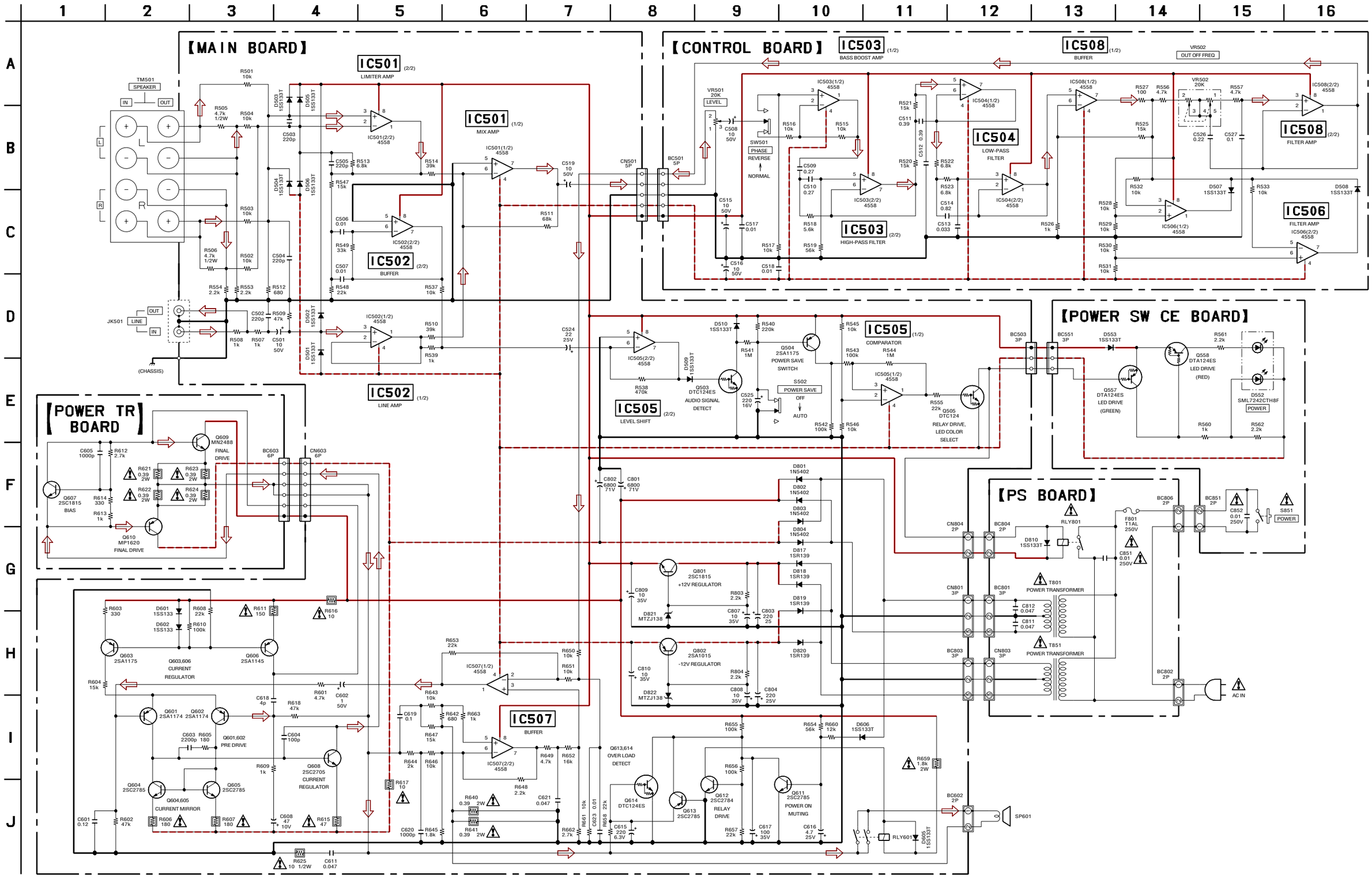
• See page 3 for Note on Printed Wiring Boards. • See page 3 for Circuit Boards Location.

- **Semiconductor Location**

Ref. No.	Location
D501	A-2
D502	B-2
D503	D-2
D504	C-2
D505	C-2
D506	C-2
D507	B-8
D508	B-9
D509	E-2
D510	F-2
D552	D-11
D553	B-11
D601	F-2
D602	E-3
D605	F-4
D606	G-2
D801	I-3
D802	I-3
D803	I-2
D804	I-2
D810	H-11
D817	B-4
D818	B-4
D819	B-4
D820	B-4
D821	B-4
D822	B-4
IC501	C-2
IC502	B-2
IC503	B-7
IC504	C-7
IC505	E-2
IC506	B-8
IC507	C-4
IC508	C-8
Q503	E-2
Q504	F-2
Q505	E-2
Q557	B-11
Q558	B-11
Q601	E-4
Q602	E-4
Q603	E-4
Q604	E-3
Q605	E-3
Q606	F-3
Q607	D-7
Q608	F-3
Q609	D-8
Q610	D-9
Q611	G-3
Q612	G-3
Q613	G-3
Q614	G-3
Q801	B-3
Q802	B-4



2-5. SCHEMATIC DIAGRAM (Except US, Canadian models) • See page 3 for Note on Schematic Diagram.



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

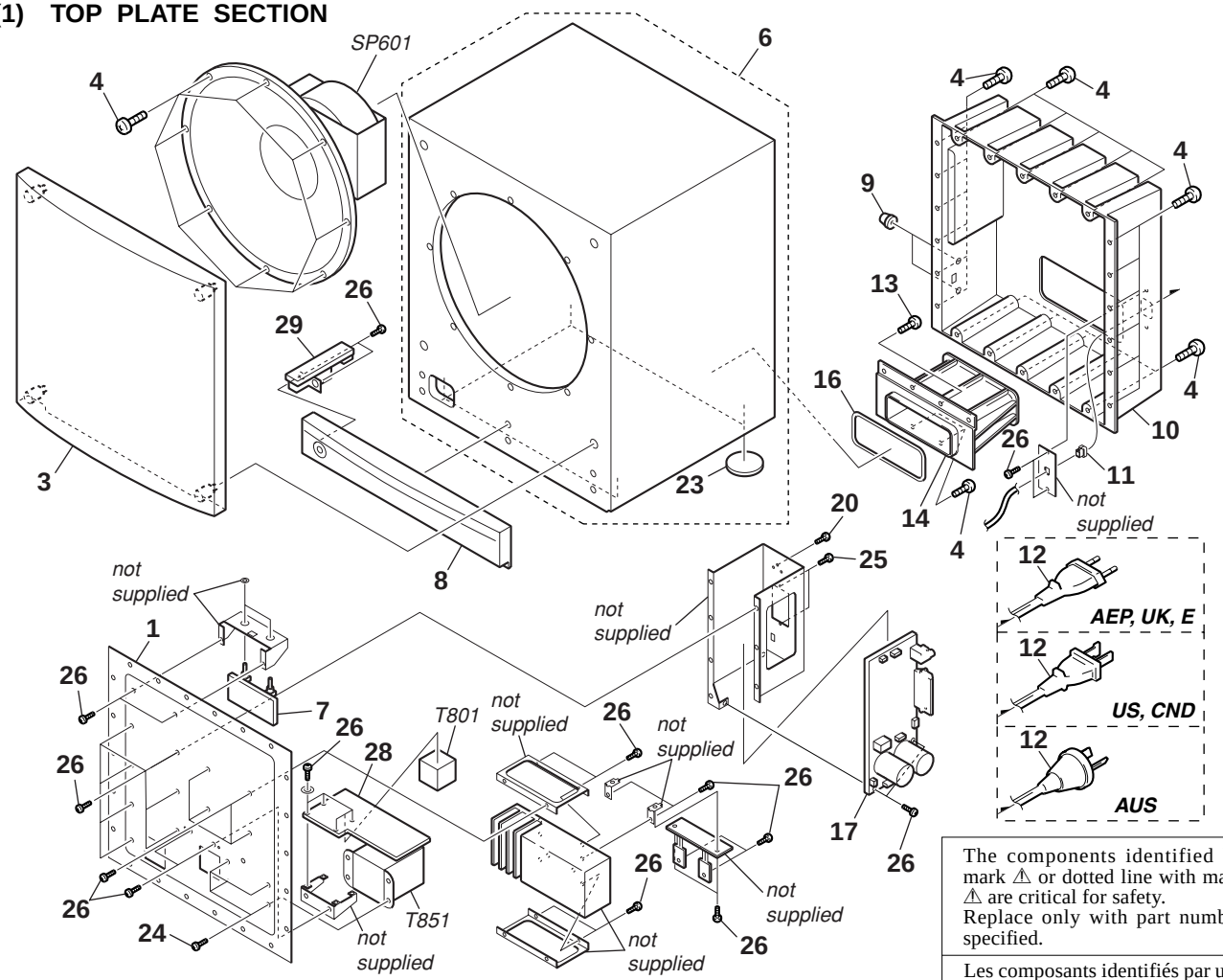
Ver 1.2

SECTION 3
EXPLODED VIEW

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories are given in the last of the electrical parts list.
- Abbreviation
  AUS : Australian model
  CND : Canadian model
  TW : Taiwan model

(1) TOP PLATE SECTION



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
1	4-228-132-01	PLATE, REAR	
3	X-4952-847-1	FRAME ASSY, GRILLE	
4	4-914-430-11	SCREW (4X20), TAPPING	
6	A-4412-160-A	CABINET ASSY, SPEAKER	
7	A-4473-571-A	CONTROL BOARD, COMPLETE	
8	X-4952-848-1	PANEL ASSY, FRONT (US, CND, E, AUS)	
8	X-4952-914-1	PANEL ASSY, FRONT (AEP, UK)	
9	4-228-138-01	BUTTON	
10	4-228-148-01	COVER, REAR (US, CND)	
10	4-228-148-11	COVER, REAR (EXCEPT US, CND)	
* 11	3-703-244-00	BUSHING (2104), CORD	
⚠12	1-696-571-21	CORD, POWER (AEP, E)	
⚠12	1-696-845-31	CORD, POWER (AUS)	
⚠12	1-751-520-11	CORD, POWER (UK, TW)	
⚠12	1-783-820-11	CORD, POWER (US, CND)	
13	7-621-846-60	SCREW (4X25), TAPPING	
14	4-228-141-01	DUCT (A)	
16	4-229-627-01	PACKING	

Ref. No.	Part No.	Description	Remark
17	A-4473-570-A	MAIN BOARD, COMPLETE (US, CND)	
17	A-4731-069-A	MAIN BOARD, COMPLETE (EXCEPT US, CND)	
20	3-710-901-11	SCREW, TAPPING	
23	4-981-864-01	FOOT	
24	7-685-660-19	SCREW +BVTP 4X10 TYPE2 N-S	
25	7-685-647-79	SCREW +P 3X10 TYPE2 NON-SLIT	
26	7-685-648-79	SCREW +P 3X12 TYPE2 NON-SLIT	
28	1-677-926-11	PS BOARD (US, CND)	
28	1-686-501-11	PS BOARD (EXCEPT US, CND)	
29	1-677-933-11	POWER SW UC BOARD (US, CND)	
29	1-686-500-11	POWER SW CE BOARD (EXCEPT US, CND)	
SP601	1-529-652-11	SPEAKER (30cm)	
⚠T801	1-435-488-11	TRANSFORMER, POWER (US, CND)	
⚠T801	1-435-489-11	TRANSFORMER, POWER (AEP, UK, AUS)	
⚠T801	1-435-491-11	TRANSFORMER, POWER (E)	
⚠T851	1-435-492-11	TRANSFORMER, POWER (US, CND)	
⚠T851	1-435-493-11	TRANSFORMER, POWER (AEP, UK, AUS)	
⚠T851	1-435-495-11	TRANSFORMER, POWER (E)	

Ver 1.2

CONTROL **MAIN**

SECTION 4
ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Abbreviation
  AUS : Australian model
  CND : Canadian model
  MY : Malaysia model
  SP : Singapore model
  TW : Taiwan model
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA. . : µA. . uPA. . : µPA. .
  uPB. . : µPB. . uPC. . : µPC. .
  uPD. . : µPD. .
- CAPACITORS
  uF: µF
- COILS
  uH: µH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
	A-4473-571-A	CONTROL BOARD, COMPLETE			
		**********			
		< CONNECTOR >			
* BC501	1-564-508-11	PLUG, CONNECTOR 5P			
		< CAPACITOR >			
C508	1-126-964-11	ELECT	10uF	20%	50V
C509	1-136-170-00	MYLAR	0.27uF	5%	50V
C510	1-136-170-00	MYLAR	0.27uF	5%	50V
C511	1-137-193-11	MYLAR	0.39uF	5%	50V
C512	1-137-193-11	MYLAR	0.39uF	5%	50V
C513	1-130-489-00	MYLAR	0.033uF	5%	50V
C514	1-136-176-00	MYLAR	0.82uF	5%	50V
C515	1-126-964-11	ELECT	10uF	20%	50V
C516	1-126-964-11	ELECT	10uF	20%	50V
C517	1-130-483-00	MYLAR	0.01uF	5%	50V
C518	1-130-483-00	MYLAR	0.01uF	5%	50V
C526	1-130-499-00	MYLAR	0.22uF	5%	50V
C527	1-130-495-00	MYLAR	0.1uF	5%	50V
		< DIODE >			
D507	8-719-991-33	DIODE 1SS133T-77			
D508	8-719-991-33	DIODE 1SS133T-77			
		< IC >			
IC503	8-759-145-58	IC BA4558			
IC504	8-759-145-58	IC BA4558			
IC506	8-759-145-58	IC BA4558			
IC508	8-759-145-58	IC BA4558			
		< RESISTOR >			
R515	1-249-429-11	CARBON	10K	5%	1/4W
R516	1-249-429-11	CARBON	10K	5%	1/4W
R517	1-249-429-11	CARBON	10K	5%	1/4W
R518	1-249-426-11	CARBON	5.6K	5%	1/4W
R519	1-249-438-11	CARBON	56K	5%	1/4W
R520	1-249-431-11	CARBON	15K	5%	1/4W
R521	1-249-431-11	CARBON	15K	5%	1/4W
R522	1-249-427-11	CARBON	6.8K	5%	1/4W
R523	1-249-427-11	CARBON	6.8K	5%	1/4W
R525	1-249-431-11	CARBON	15K	5%	1/4W
R526	1-249-417-11	CARBON	1K	5%	1/4W
R527	1-247-807-31	CARBON	100	5%	1/4W
R528	1-249-429-11	CARBON	10K	5%	1/4W
R529	1-249-429-11	CARBON	10K	5%	1/4W
R530	1-249-429-11	CARBON	10K	5%	1/4W
R531	1-249-429-11	CARBON	10K	5%	1/4W
R532	1-249-429-11	CARBON	10K	5%	1/4W
R533	1-249-429-11	CARBON	10K	5%	1/4W
R556	1-247-847-11	CARBON	4.7K	5%	1/4W
R557	1-247-847-11	CARBON	4.7K	5%	1/4W
		< SWITCH >			
SW501	1-571-588-21	SWITCH, SLIDE (PHASE)			
		< VARIABLE RESISTOR >			
VR501	1-227-492-11	RES, VAR, CARBON 20K (LEVEL)			
VR502	1-227-493-11	RES, VAR, CARBON 20K (CUT OFF FREQ)			
**********					
	A-4473-570-A	MAIN BOARD, COMPLETE (US, CND)			
	A-4731-069-A	MAIN BOARD, COMPLETE (EXCEPT US, CND)			
		**********			
		< CONNECTOR >			
* BC503	1-564-508-11	PLUG, CONNECTOR 5P			
* BC602	1-566-693-11	PIN, CONNECTOR 2P			
* BC803	1-564-506-11	PLUG, CONNECTOR 3P			
		< CAPACITOR >			
C501	1-126-964-11	ELECT	10uF	20%	50V
C502	1-102-978-00	CERAMIC	220PF	5%	50V
C503	1-102-978-00	CERAMIC	220PF	5%	50V
C504	1-102-978-00	CERAMIC	220PF	5%	50V
C505	1-102-978-00	CERAMIC	220PF	5%	50V
C506	1-130-483-00	MYLAR	0.01uF	5%	50V
C507	1-130-483-00	MYLAR	0.01uF	5%	50V
C519	1-126-964-11	ELECT	10uF	20%	50V
C524	1-128-551-11	ELECT	22uF	20%	63V
C525	1-126-934-11	ELECT	220uF	20%	16V
C601	1-136-166-00	MYLAR	0.12uF	5%	50V
C602	1-126-960-11	ELECT	1uF	20%	50V
C603	1-101-002-00	CERAMIC	0.0022uF		50V
C604	1-102-973-00	CERAMIC	100PF	5%	50V
C608	1-126-947-11	ELECT	47uF	20%	10V
C611	1-130-491-00	MYLAR	0.047uF	5%	50V

Ref. No.	Part No.	Description			Remark
C615	1-126-934-11	ELECT	220uF	20%	10V
C616	1-126-963-11	ELECT	4.7uF	20%	50V
C617	1-126-948-11	ELECT	100uF	20%	35V
C618	1-102-937-00	CERAMIC	4.0PF	0.25PF	50V
C619	1-130-485-00	MYLAR	0.015uF	5%	50V (US, CND)
C619	1-130-495-00	MYLAR	0.1uF	5%	50V (EXCEPT US, CND)
C620	1-101-001-00	CERAMIC	0.001uF		50V
C621	1-130-491-00	MYLAR	0.047uF	5%	50V
C623	1-130-483-00	MYLAR	0.01uF	5%	50V
C801	1-165-946-11	ELECT	6800uF	20%	71V
C802	1-165-946-11	ELECT	6800uF	20%	71V
C803	1-104-666-11	ELECT	220uF	20%	25V
C804	1-104-666-11	ELECT	220uF	20%	25V
C807	1-126-964-11	ELECT	10uF	20%	50V
C808	1-126-964-11	ELECT	10uF	20%	50V
C809	1-126-964-11	ELECT	10uF	20%	50V
C810	1-126-964-11	ELECT	10uF	20%	50V
		< CONNECTOR >			
* CN501	1-564-508-11	PLUG, CONNECTOR 5P			
* CN603	1-564-509-11	PLUG, CONNECTOR 6P			
* CN804	1-564-505-11	PLUG, CONNECTOR 2P			
		< DIODE >			
D501	8-719-991-33	DIODE 1SS133T-77			
D502	8-719-991-33	DIODE 1SS133T-77			
D503	8-719-991-33	DIODE 1SS133T-77			
D504	8-719-991-33	DIODE 1SS133T-77			
D505	8-719-991-33	DIODE 1SS133T-77			
D506	8-719-991-33	DIODE 1SS133T-77			
D509	8-719-991-33	DIODE 1SS133T-77			
D510	8-719-991-33	DIODE 1SS133T-77			
D601	8-719-991-33	DIODE 1SS133T-77			
D602	8-719-991-33	DIODE 1SS133T-77			
D605	8-719-991-33	DIODE 1SS133T-77			
D606	8-719-991-33	DIODE 1SS133T-77			
D801	8-719-030-52	DIODE 1N5402			
D802	8-719-030-52	DIODE 1N5402			
D803	8-719-030-52	DIODE 1N5402			
D804	8-719-030-52	DIODE 1N5402			
D817	8-719-200-82	DIODE 1SR139-100			
D818	8-719-200-82	DIODE 1SR139-100			
D819	8-719-200-82	DIODE 1SR139-100			
D820	8-719-200-82	DIODE 1SR139-100			
D821	8-719-200-82	DIODE 11ES2 (US, CND)			
D821	8-719-110-36	DIODE RD13ESB2 (EXCEPT US, CND)			
D822	8-719-200-82	DIODE 11ES2 (US, CND)			
D822	8-719-110-36	DIODE RD13ESB2 (EXCEPT US, CND)			
		< IC >			
IC501	8-759-145-58	IC BA4558			
IC502	8-759-145-58	IC BA4558			
IC505	8-759-145-58	IC BA4558			
IC507	8-759-145-58	IC BA4558			

Ref. No.	Part No.	Description			Remark
		< JACK >			
JK501	1-785-795-11	JACK, PIN 2P (LINE)			
		< TRANSISTOR >			
Q503	8-729-029-86	TRANSISTOR	DTC124ESA-TP		
Q504	8-729-119-54	TRANSISTOR	2SA1464-T2Y13 (US, CND)		
Q504	8-729-119-76	TRANSISTOR	2SA1175-HFE (EXCEPT US, CND)		
Q505	8-729-029-86	TRANSISTOR	DTC124ESA-TP		
Q601	8-729-117-41	TRANSISTOR	2SA1174-P		
Q602	8-729-117-41	TRANSISTOR	2SA1174-P		
Q603	8-729-119-54	TRANSISTOR	2SA1464-T2Y13 (US, CND)		
Q603	8-729-119-76	TRANSISTOR	2SA1175-HFE (EXCEPT US, CND)		
Q604	8-729-119-78	TRANSISTOR	2SC2785-F		
Q605	8-729-119-78	TRANSISTOR	2SC2785-F		
Q606	8-729-214-51	TRANSISTOR	2SA1145-O		
Q608	8-729-270-51	TRANSISTOR	2SC2705-O		
Q611	8-729-119-78	TRANSISTOR	2SC2785-F		
Q612	8-729-178-41	TRANSISTOR	2SC2784-P		
Q613	8-729-119-78	TRANSISTOR	2SC2785-F		
Q614	8-729-029-86	TRANSISTOR	DTC124ESA-TP		
Q801	8-729-281-53	TRANSISTOR	2SC1815-GR		
Q802	8-729-231-12	TRANSISTOR	2SA1015TP-O		
		< RESISTOR >			
R501	1-249-429-11	CARBON	10K	5%	1/4W
R502	1-249-429-11	CARBON	10K	5%	1/4W
R503	1-249-429-11	CARBON	10K	5%	1/4W
R504	1-249-429-11	CARBON	10K	5%	1/4W
R505	1-247-760-11	CARBON	4.7K	5%	1/2W
R506	1-247-760-11	CARBON	4.7K	5%	1/2W
R507	1-249-417-11	CARBON	1K	5%	1/4W
R508	1-249-417-11	CARBON	1K	5%	1/4W
R509	1-249-437-11	CARBON	47K	5%	1/4W
R510	1-249-436-11	CARBON	39K	5%	1/4W
R511	1-249-439-11	CARBON	68K	5%	1/4W
R512	1-249-415-11	CARBON	680	5%	1/4W
R513	1-249-427-11	CARBON	6.8K	5%	1/4W
R514	1-249-436-11	CARBON	39K	5%	1/4W
R537	1-249-429-11	CARBON	10K	5%	1/4W
R538	1-247-895-00	CARBON	470K	5%	1/4W
R539	1-249-417-11	CARBON	1K	5%	1/4W
R540	1-247-887-00	CARBON	220K	5%	1/4W
R541	1-247-903-00	CARBON	1M	5%	1/4W
R542	1-249-441-11	CARBON	100K	5%	1/4W
R543	1-249-441-11	CARBON	100K	5%	1/4W
R544	1-247-903-00	CARBON	1M	5%	1/4W
R545	1-249-429-11	CARBON	10K	5%	1/4W
R546	1-249-429-11	CARBON	10K	5%	1/4W
R547	1-249-431-11	CARBON	15K	5%	1/4W
R548	1-249-433-11	CARBON	22K	5%	1/4W
R549	1-249-435-11	CARBON	33K	5%	1/4W
R553	1-249-421-11	CARBON	2.2K	5%	1/4W
R554	1-249-421-11	CARBON	2.2K	5%	1/4W
R555	1-249-433-11	CARBON	22K	5%	1/4W
R601	1-249-425-11	CARBON	4.7K	5%	1/4W

Ver 1.2

MAIN | POWER SWITCH CE | POWER SW UC

Ref. No.	Part No.	Description			Remark
R602	1-249-437-11	CARBON	47K	5%	1/4W
R603	1-249-411-11	CARBON	330	5%	1/4W
R604	1-249-431-11	CARBON	15K	5%	1/4W
R605	1-249-408-11	CARBON	180	5%	1/4W
⚠R606	1-247-703-11	CARBON	180	5%	1/4W F (US, CND)
⚠R606	1-249-408-11	CARBON	180	5%	1/4W F (EXCEPT US, CND)
⚠R607	1-247-703-11	CARBON	180	5%	1/4W F (US, CND)
⚠R607	1-249-408-11	CARBON	180	5%	1/4W F (EXCEPT US, CND)
R608	1-249-433-11	CARBON	22K	5%	1/4W
R609	1-249-417-11	CARBON	1K	5%	1/4W
R610	1-249-441-11	CARBON	100K	5%	1/4W
⚠R611	1-247-702-11	CARBON	150	5%	1/4W F (US, CND)
⚠R611	1-249-407-11	CARBON	150	5%	1/4W F (EXCEPT US, CND)
⚠R615	1-247-696-11	CARBON	47	5%	1/4W F (US, CND)
⚠R615	1-249-401-11	CARBON	47	5%	1/4W F (EXCEPT US, CND)
⚠R616	1-247-688-11	CARBON	10	5%	1/4W F (US, CND)
⚠R616	1-249-393-11	CARBON	10	5%	1/4W F (EXCEPT US, CND)
⚠R617	1-247-688-11	CARBON	10	5%	1/4W F (US, CND)
⚠R617	1-249-393-11	CARBON	10	5%	1/4W F (EXCEPT US, CND)
R618	1-249-437-11	CARBON	47K	5%	1/4W
⚠R625	1-247-688-11	CARBON	10	5%	1/4W F (US, CND)
⚠R625	1-247-727-11	CARBON	10	5%	1/4W F (EXCEPT US, CND)
⚠R640	1-216-364-11	METAL OXIDE FILM	0.39	5%	2W F
⚠R641	1-216-364-11	METAL OXIDE FILM	0.39	5%	2W F
R642	1-249-415-11	CARBON	680	5%	1/4W
R643	1-249-429-11	CARBON	10K	5%	1/4W
R644	1-247-838-00	CARBON	2K	5%	1/4W
R645	1-249-420-11	CARBON	1.8K	5%	1/4W
R646	1-249-429-11	CARBON	10K	5%	1/4W
R647	1-249-431-11	CARBON	15K	5%	1/4W
R648	1-249-421-11	CARBON	2.2K	5%	1/4W
R649	1-249-425-11	CARBON	4.7K	5%	1/4W
R650	1-249-429-11	CARBON	10K	5%	1/4W
R651	1-249-429-11	CARBON	10K	5%	1/4W
R652	1-247-860-11	CARBON	16K	5%	1/4W
R653	1-249-433-11	CARBON	22K	5%	1/4W
R654	1-249-438-11	CARBON	56K	5%	1/4W
R655	1-249-441-11	CARBON	100K	5%	1/4W
R656	1-249-441-11	CARBON	100K	5%	1/4W
R657	1-249-433-11	CARBON	22K	5%	1/4W
R658	1-249-433-11	CARBON	22K	5%	1/4W
⚠R659	1-216-458-71	METAL OXIDE	1.8K	5%	2W F
R660	1-249-430-11	CARBON	12K	5%	1/4W
R661	1-249-429-11	CARBON	10K	5%	1/4W
R662	1-249-422-11	CARBON	2.7K	5%	1/4W
R663	1-249-417-11	CARBON	1K	5%	1/4W
R803	1-249-421-11	CARBON	2.2K	5%	1/4W
R804	1-249-421-11	CARBON	2.2K	5%	1/4W
		< RELAY >			
RLY601	1-515-920-11	RELAY (24V)			
		< SWITCH >			
SW502	1-571-588-21	SWITCH, SLIDE (POWER SAVE)			
		< TERMINAL >			
TM501	1-537-737-11	TERMINAL BOARD (SPEAKER) (US, CND)			
TM501	1-537-922-11	TERMINAL BOARD (SP) (SPEAKER) (EXCEPT US, CND)			
**********					
	1-686-500-11	POWER SWITCH CE BOARD (EXCEPT US, CND)			
		**********			
		< CONNECTOR >			
BC551	1-564-506-11	PLUG, CONNECTOR 3P			
BC851	1-564-320-00	PIN, CONNECTOR (3.96mm PITCH) 2P			
		< CAPACITOR >			
⚠C852	1-113-925-11	CERAMIC	0.01uF	20%	250V
		< DIODE >			
D552	8-719-061-31	LED SML72420CTH8F (POWER)			
D553	8-719-991-33	DIODE 1SS133T-77			
		< TRANSISTOR >			
Q557	8-729-029-40	TRANSISTOR	DTA124ESA		
Q558	8-729-029-40	TRANSISTOR	DTA124ESA		
		< RESISTOR >			
R560	1-249-417-11	CARBON	1K	5%	1/4W
R561	1-249-421-11	CARBON	2.2K	5%	1/4W
R562	1-249-421-11	CARBON	2.2K	5%	1/4W
		< SWITCH >			
⚠S851	1-554-522-00	SWITCH, PUSH (1 KEY) (POWER)			
**********					
	1-677-933-11	POWER SW UC BOARD (US, CND)			
		**********			
		< CONNECTOR >			
* BC502	1-566-693-11	PIN, CONNECTOR 2P			
		< DIODE >			
D511	8-719-991-33	DIODE 1SS133T-77			
D512	8-719-061-31	LED SML72420CTH8F (POWER)			
		< TRANSISTOR >			
Q507	8-729-029-40	TRANSISTOR	BN1F4M		
Q508	8-729-029-40	TRANSISTOR	BN1F4M		

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Ref. No.	Part No.	Description				Remark
		< RESISTOR >				
R550	1-249-417-11	CARBON	1K	5%	1/4W	
R551	1-249-421-11	CARBON	2.2K	5%	1/4W	
R552	1-249-421-11	CARBON	2.2K	5%	1/4W	
		< SWITCH >				
S801	1-554-920-11	SWITCH, PUSH (AC POWER) (1 KEY)				(POWER)
**********						
	1-677-926-11	PS BOARD				
		**********				
		< CONNECTOR >				
BC801	1-564-506-11	PLUG, CONNECTOR 3P				
BC802	1-564-320-00	PIN, CONNECTOR (3.96mm PITCH) 2P				(EXCEPT US, CND)
BC804	1-564-505-11	PLUG, CONNECTOR 2P				
BC806	1-564-320-00	PIN, CONNECTOR (3.96mm PITCH) 2P				(EXCEPT US, CND)
		< CAPACITOR >				
⚠C851	1-113-925-11	CERAMIC	0.01uF	20%	250V	
		< CONNECTOR >				
* CN801	1-564-104-00	PIN, CONNECTOR (B3P-VH) 3P (US, CND)				
* CN803	1-564-104-00	PIN, CONNECTOR (B3P-VH) 3P				
		< DIODE >				
D810	8-719-991-33	DIODE 1SS133T-77				
		< FUSE >				
⚠F801	1-532-437-11	FUSE, GLASS TUBE (2.5A/125V) (US, CND)				
⚠F801	1-532-463-51	FUSE (T1AL/250V) (EXCEPT US, CND)				
		< RELAY >				
⚠RLY801	1-755-276-11	RELAY, POWER				
		< POWER TRANSFORMER >				
⚠T801	1-435-488-11	TRANSFORMER, POWER (US, CND)				
⚠T801	1-435-489-11	TRANSFORMER, POWER (AEP, UK, AUS)				
⚠T801	1-435-491-11	TRANSFORMER, POWER (E)				
⚠T851	1-435-492-11	TRANSFORMER, POWER (US, CND)				
⚠T851	1-435-493-11	TRANSFORMER, POWER (AEP, UK, AUS)				
⚠T851	1-435-495-11	TRANSFORMER, POWER (E)				
**********						
	1-677-927-11	POWER TR BOARD				
		**********				
		< CONNECTOR >				
BC603	1-506-947-11	PIN, CONNECTOR 6P				
		< CAPACITOR >				
C605	1-101-001-00	CERAMIC	0.001uF		50V	

Ref. No.	Part No.	Description				Remark
		< TRANSISTOR/IC >				
Q607	8-729-281-53	TRANSISTOR 2SC1815-GR				
Q609	8-749-010-25	IC MN2488-OPY-M				
Q610	8-749-010-26	IC MP1620-OPY-M				
		< RESISTOR >				
R612	1-249-422-11	CARBON	2.7K	5%	1/4W	
R613	1-249-417-11	CARBON	1K	5%	1/4W	
R614	1-249-411-11	CARBON	330	5%	1/4W	
⚠R621	1-216-364-11	METAL OXIDE FILM	0.39	5%	2W	F
⚠R622	1-216-364-11	METAL OXIDE FILM	0.39	5%	2W	F
⚠R623	1-216-364-11	METAL OXIDE FILM	0.39	5%	2W	F
⚠R624	1-216-364-11	METAL OXIDE FILM	0.39	5%	2W	F
**********						
		MISCELLANEOUS				
		**********				
⚠12	1-696-571-21	CORD, POWER (AEP, E)				
⚠12	1-696-845-31	CORD, POWER (AUS)				
⚠12	1-751-520-11	CORD, POWER (UK, TW)				
⚠12	1-783-820-11	CORD, POWER (US, CND)				
SP601	1-529-652-11	SPEAKER (30cm)				
⚠T801	1-435-488-11	TRANSFORMER, POWER (US, CND)				
⚠T801	1-435-489-11	TRANSFORMER, POWER (AEP, UK, AUS)				
⚠T801	1-435-491-11	TRANSFORMER, POWER (E)				
⚠T851	1-435-492-11	TRANSFORMER, POWER (US, CND)				
⚠T851	1-435-493-11	TRANSFORMER, POWER (AEP, UK, AUS)				
⚠T851	1-435-495-11	TRANSFORMER, POWER (E)				
**********						
		ACCESSORIES				
		**********				
⚠	1-569-008-21	ADAPTOR, CONVERSION 2P				(MY, SP, TW, AUS)
	1-769-329-21	CORD, CONNECTION (PIN-PIN)				
	1-769-433-21	CORD, SPEAKER				
	4-228-525-11	MANUAL, INSTRUCTION (ENGLISH, SPANISH)				(US, UK)
	4-228-525-21	MANUAL, INSTRUCTION (ENGLISH, FRENCH)				(CND, AEP, MY, SP, AUS)
	4-228-525-31	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN, PORTUGUESE, FINNISH, DANISH, SPANISH) (AEP)				
	4-228-525-11	MANUAL, INSTRUCTION (SPANISH, CHINESE)				(MY, SP, TW)

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REVISION HISTORY

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Ver.	Date	Description of Revision
1.0	2000.02	New
1.1	2001.01	Addition of Taiwan Model (ENG-00002)
1.2	2002.09	Incorporation of Supplement-1 Addition of schematic diagrams and printed wiring boards for except US and Canadian models (SPM-02076)